

## Abstract

The present invention provides probes for detection and quantification of a lipid second messenger, which comprises: a polypeptide specifically bound  
5 to the lipid second messenger; two chromophores respectively having different fluorescence wavelengths, wherein each of the chromophores is linked to each end of the polypeptide through a rigid linker sequence; and a membrane localization sequence linked to one of the chromophores through a rigid linker sequence. According to the present invention, it is now possible to  
10 quantitatively detect when and in which site of a living cell the lipid second messengers are produced.